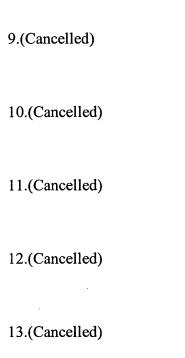1.(Cancelled)

2.(Cancelled)

3.(Cancelled)

4.(Cancelled)

5.(Cancelled)

6.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

a navigation processing unit that receives the sensor data, and requests map data from the navigation map data memory associated with the sensor data, and computes the map image from the map data,

where terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiral,~~The vehicle navigation system of claim 5~~, where the Cornu spiral is of the form $l = Ka^2$, where l is indicative of arc length and K is indicative of curvature.

7.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

     a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

     a navigation processing unit that receives the sensor data, and requests map data from the navigation map data memory associated with the sensor data, and computes the map image from the map data,

     where terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiralThe vehicle navigation system of claim 5, where the navigation map data memory includes coordinates of the unit Cornu spiral stored in a table, from which all the Cornu spirals of the navigation map are derived.

8.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

     a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

     a navigation processing unit that receives the sensor data, and requests map data from the navigation map data memory associated with the sensor data, and computes the map image from the map data,

where terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiralThe vehicle navigation system of claim 5, where the navigation map data memory includes coordinates of the unit Cornu spiral stored in a table, from which all the Cornu spirals of the navigation map are derived for roads, railroad lines, rivers, lakes, and similar cartographic parameters defined as Cornu spirals.

9.(Cancelled)

10.(Cancelled)

11.(Cancelled)

12.(Cancelled)

13.(Cancelled)

14.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

    a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

means for receiving the sensor data, for requesting map data from the navigation map data memory associated with the sensor data, and for computing the map image from the map data,;

where the means for computing computes the map image using Cornu spiral polynomial coefficients stored in the navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiral and ~~The~~

~~vehicle navigation system of claim 13, where~~ the Cornu spiral is of the form $l = Ka^2$, where l is indicative of arc length and K is indicative of curvature.

15.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

means for receiving the sensor data, for requesting map data from the navigation map data memory associated with the sensor data, and for computing the map image from the map data,;

where the means for computing computes the map image using Cornu spiral polynomial coefficients stored in the navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiral and ~~The~~

~~vehicle navigation system of claim 13, where~~ the navigation map data memory includes coordinates of the unit Cornu spiral stored in a table, from which ~~all~~ the Cornu spirals of the navigation map are derived.

16.(Currently Amended)   A vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, the system comprising:

a navigation map data memory that includes map data indicative of roadways stored in Cornu spiral form and data indicative of a unit Cornu spiral; and

means for receiving the sensor data, for requesting map data from the navigation map data memory associated with the sensor data, and for computing the map image from the map data.;

where the means for computing computes the map image using Cornu spiral polynomial coefficients stored in the navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in the navigation map data memory and the map image is computed using the terms of polynomials of the unit Cornu spiral, where the terms of polynomials are associated with Taylor series expressions indicative of the Cornu spiral and ~~The vehicle navigation system of claim 13, where~~ the navigation map data memory includes coordinates of the unit Cornu spiral stored in a table, from which ~~all~~ the Cornu spirals of the navigation map are derived for roads, railroad lines, rivers, lakes, and similar cartographic parameters defined as Cornu spirals.

17.(Cancelled)